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STATEMENT OF WORK
FOR
ROCKY FLATS PLANT
OPERABLE UNIT 3
WATER AND SEDIMENT SAMPLING
IN
STANDLEY LAKE,
GREAT WESTERN RESERVOIR
AND
MOWER RESERVOIR

PREPARED BY

ENVIRONMENTAL MANAGEMENT
DEPARTMENT OF ENERGY

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REVIEWED FOR CLASSIFICATION

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ADMIN RECORD

A-DU03-000199

OPERABLE UNIT 3 STATEMENT OF WORK WATER AND SEDIMENT SAMPLING

1.0 OBJECTIVE

The objective of this statement of work (SOW) is to request the United States Geological Survey (USGS) to conduct water and sediment sampling in three offsite reservoirs as part of the CERCLA/RCRA Facility Investigation/Remedial Investigation (RFI/RI) for Operable Unit 3 (OU 3) at the Rocky Flats Plant (RFP). The sampling activities identified in this SOW for Standley Lake, Great Western Reservoir and Mower Reservoir are a portion of the total environmental field work to be conducted during 1992 under the OU 3 RFI/RI.

The objective of the reservoir sediment sampling program is to verify historical sediment data from sampling done by RFP in 1983-84. The 1983-84 data lacks the data useability criteria currently required for use at RFP. The statistical criteria for data verification of existing historical data is outlined in the OU 3 Work Plan.

2.0 SCOPE

This SOW describes sampling and associated activities for the characterization of sediments and surface water in three offsite reservoirs, which are part of the overall OU 3 RFI/RI. The area of investigation for OU 3 is adjacent to RFP and primarily east of Indiana Avenue, including Standley Lake, Great Western Reservoir and Mower Reservoir. This SOW addresses sampling activities to include project planning, sample collection, sample handling, geological descriptions and coordination with DOE, EG&G and EG&G's subcontractor. Water samples shall be collected from each reservoir at depths to be determined in the field. Sediment samples include core samples to 45 inches or greater, where possible, and surface grab samples collected from each reservoir. A total of ten sediment core samples, 65 surface grab samples and 30 water samples shall be taken from the three reservoirs.

3.0 BACKGROUND

Activities under the OU 3 RFI/RI are subject to the Environmental Restoration Inter-Agency Agreement (IAG) between the Environmental Protection Agency (EPA), the Colorado Department of Health (CDH) and the U.S. Department of Energy (DOE). The IAG has identified four OU 3 (offsite) Individual Hazardous Substance Sites (IHSS's); the land surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201) and Mower Reservoir (IHSS 202).

The direction and scheduling for the work under this SOW is found in the Final RFI/RI Work Plan for Operable Unit 3. The Work Plan has been developed by DOE, EG&G Environmental Management (EM) and EG&G's subcontractor with review and comment by EPA and CDH. Copies of the Work Plan, Environmental Restoration IAG and applicable standard operating procedures (SOP's) will be provided to the USGS. Water and sediment sampling in the reservoirs is part of a comprehensive environmental study of the air, soils, sediments, groundwater, surface water and biota of areas offsite of RFP. The overall objectives of the RFI/RI are to:

- Characterize physical and ecological features of the site
- Characterize the nature and extent of contamination at each IHSS in each media that is a potential pathway
- Collect data to support a quantitative Human Health Risk Assessment
- Collect data to support the Environmental Evaluation

4.0 TECHNICAL REQUIREMENTS/TASKS

4.1 GENERAL

The USGS shall provide all materials, personnel and services required to perform and implement water and sediment sampling and associated activities described in this SOW. The USGS shall be responsible for all tasks in this SOW, except those sections specifically stated as provided by EG&G. This SOW contains all USGS requirements for water and sediment sampling, but does not include reference material, guidance documents, and historical reports, which can be obtained upon request from EG&G. The work shall be performed in accordance with SOP's provided by EG&G. USGS requirements shall be directed by this SOW, sampling SOP's and the approved OU 3 RFI/RI Work Plan. A working relationship should be developed between USGS, DOE and EG&G to facilitate effective communication and technical problem resolution.

4.1.1 USGS personnel shall attend three meetings at USGS in Golden, Colorado prior to sampling to discuss the proposed sampling program and coordinate the sampling activities with DOE and EG&G. Three meetings will be held in Golden, following sampling to coordinate data interpretation and report writing and possible presentations to EPA and CDH.

4.1.2 The USGS shall obtain all necessary access agreements from property owners required for the sampling described in this SOW. Copies of the Access Agreements shall be reviewed by EG&G and placed on file with EG&G prior to sampling.

4.1.3 The USGS shall follow RFP Environmental Management standard operating procedures (SOP's) which will be provided by EG&G.

4.1.4 EG&G shall provide personnel to oversee the QA procedures associated with sampling, sample preparation and shipping. EG&G will also provide for input of data into the Rocky Flats Environmental Data System. Work performed

under this SOW is directed by the EG&G EM Quality Assurance Project Plan (QAPjP).

4.1.5 The USGS shall provide the survey team and instruments necessary to position the USGS sampling boat in predetermined sampling locations that correspond to the RFP 1983-84 sediment studies. The survey coordinates of sampling locations will be provided by EG&G. Mower Reservoir has not been previously studied, thus sampling location coordinates will be determined with consultation from USGS.

4.1.6 Following sample collection and preparation by USGS, EG&G shall be responsible for sample shipping. EG&G shall provide all shipping containers. EG&G shall be responsible for costs of shipping and sample analysis.

4.1.7 The USGS shall develop and follow their own Health and Safety Program for this sampling activity. The Health and Safety Plan (HSP) shall be reviewed by EG&G. USGS shall respond to EG&G comments if required. This HSP shall be placed on file with EG&G.

4.1.8 The USGS in consultation with EG&G shall develop a detailed field sampling plan. The field sampling plan shall outline all steps in the sampling process and sample preparation. This outline shall also contain a discussion of study objectives and laboratory procedures needed to meet the study objectives. This field sampling plan shall be included in the USGS Summary Field Sampling Report described in Section 4.4.1 of this SOW. The USGS shall provide consultation to EG&G in the development of SOP's for the sampling activities needed for water and sediment sampling in the reservoirs, following requirements of the OU 3 Work Plan.

4.2 SEDIMENT SAMPLING

4.2.1 The USGS shall take sediment cores from predetermined locations within the reservoirs. Core depth will be to 45 inches or greater, depending upon total sediment depth. The sediment core shall be geologically characterized according to SOP SW.6, Sediment Sampling. SOP SW.6 requires photography and microscopic analysis of the cores. SOP's shall be provided to USGS by EG&G. The cores shall be divided by intervals prior to shipping. The top 6 inches, which is likely to get compacted during collection, will be the first interval sample. From 6 inches to the bottom of the core, 2-inch interval samples will be collected and shipped for analysis.

4.2.1.1. Sediment cores shall be taken from four (4) locations within Standley Lake Reservoir.

4.2.1.2. Sediment cores shall be taken from three (3) locations each in Great Western Reservoir and Mower Reservoir.

4.2.2 The USGS shall take surface sediment grab samples from predetermined locations within the reservoir. Surveyed sampling locations shall be coordinated with sampling locations in the RFP 1983-84 sediment sampling studies.

4.2.2.1. Thirty (30) surface sediment grab samples shall be taken from Standley Lake Reservoir.

4.2.2.2. Twenty five (25) surface sediment grab samples shall be taken from Great Western Reservoir.

4.2.2.3. Ten (10) surface sediment grab samples shall be taken from Mower Reservoir.

4.2.3 Reservoir sediment samples will be analyzed for plutonium 239+240, americium 241, uranium 233+234, 235 and 238, gross alpha and beta, and EPA Contract Lab Program (CLP) Target Analyte List (TAL) metals. Reservoir sediments in Mower will also be analyzed for EPA-CLP Volatile Organic Target Compound List (TCL) volatiles. Ten percent of all grab samples will be analyzed for Total Organic Carbon (TOC), bulk specific gravity and grain size.

4.3 WATER SAMPLING

4.3.1 The USGS shall sample water from five (5) locations within each of the three reservoirs. The water sampling locations will be coordinated with sediment sampling locations. Water samples shall be taken before sediment samples to avoid contaminating sediment in the water samples. The USGS shall provide consultation on appropriate water sampling techniques in relation to water stratification within the reservoirs. At a minimum, samples at each location will be collected in two stratified layers. Temperature, dissolved oxygen, electrical conductivity and pH measurements shall be taken according to SOP SW.8. General surface water sampling procedures described in SOP SW.3 shall be followed. SOP's shall be provided to USGS by EG&G. Samples will be collected twice; once during a highly stratified time period and once during a nonstratified time period. These time periods shall be determined by the USGS.

4.3.2 Surface water samples will be analyzed for plutonium 239+240, americium 241, uranium 233+234, 235 and 238, gross alpha and gross beta, CLP-TAL metals, atrazine, simazine, cations/anions. Dissolved oxygen, pH and specific conductance shall be performed in the field. Samples from Mower will also be analyzed for CLP-TCL volatiles.

4.4 REPORTING

4.4.1 Following final sample collection, USGS shall provide a summary report containing a detailed documentation of all sampling activities. This report shall include a description of sampling activities, schedule followed, field parameter data, problems encountered with solutions and other pertinent data. The appendix of the report shall contain copies of all field notes.

4.4.2 After analysis results are received from the laboratory, the USGS shall prepare an interpretive report that evaluates the data. Following an initial review of the data, USGS will meet with DOE and EG&G to discuss an appropriate outline for the interpretive report. Topics to be considered in the report are; comparison of results to historical sampling reports, relevant site physical conditions, analyte levels found and statistical evaluation of results.

5.0 DELIVERABLES

5.1 The USGS shall present an implementation plan for completion of the water and sediment sampling to DOE 10 days from authorization to begin work. The implementation plan shall contain the proposed sampling program and schedule with completion of sampling prior to November 31, 1992.

5.2 The USGS shall deliver water and sediment samples as described in 4.2 and 4.3.

5.3 The USGS shall provide the summary report, described in 4.4.1 above, to DOE within 20 working days of sampling completion.

5.4 The USGS shall provide hard and disc copy of draft and final interpretive reports, described in 4.4.2 above, to DOE in a timely manner. The completion of the draft report shall not exceed six (6) months from receiving laboratory analysis data and the final shall not exceed four (4) months from completion of EG&G review of the draft report. The summary and interpretive reports shall be submitted in ASCII format as well as hard copy.

6.0 POINT OF CONTACT

6.1 The DOE Project Manager responsible for oversight of this task is:

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6.2 The EG&G Project Manager is:

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